PRIZE BULL ENTERTAINED AT EXCLUSIVE NEW YORK HOTEL

In working this spring in an iris bed that was planted last autumn the wooden plant labels were found raised out of the ground from one to three inches. This was unexpected on account of the mild winter, and shows the remarkable action of freezing and thawing in throwing plants and posts out of the ground.

White fly is about as troublesome as insect on house plants as can be imagined. If troubled, try spraying with sulco-V-B. White fly will, no doubt, be troublesome in the garden this summer.

A spray of ivy placed in a vase last autumn is still fresh and green on April 21. The vase was kept filled with water and washed out about once every three weeks.

The winter wheat crop in New York State is in excellent condition and so also is rye.

Parsley delight in very rich, deep soil, plenty of water and slight shade. The land should be well drained and the plants not permitted to go to seed. Treated thus they will flower abundantly.

SPRAYING.

By A. SCHLEIMER.

There is undoubtedly more trouble and greater variation in the preparation of spray solutions than any other thing on the farm.

Just why this should be so is hard to understand when one considers the vast amount of literature on the subject.

Properly prepared a good fungicide is worth its weight in gold when one stops to consider the great increase in returns.

Every farmer should know how to make them properly. There are of course some who have no need of them, fortunately; but they have no guarantee how soon they may.

No matter how careful and thorough you may be, if a neighbor happens to be careless of his orchard it means trouble for those near him, and when the time comes to fight it it is no time to prepare.

Even though the solutions are made on a small scale, in about one quart or one gallon quantities, it will acquaint one with the method of making them, at practically no cost. And no amount of reading will ever equal the knowledge or experience that is gained by demonstration.

For this reason I would advise every one who at one time or another may have use for them to make them up on a small scale for their own information.

There are several general fungicides, used for a variety of purposes, among which the Bordeaux, the lime-sulphur and the arsenate of lead are the most complex; and if the compounding of these is understood there will be no trouble in making others.

Bordeaux Mixture.

This well known remedy originated in the province of Bordeaux, France, which for years has been noted for its grape culture and its wines.

Its discovery was entirely due to accident. It was the custom where the vineyards in this place adjoined the public thoroughfare to sprinkle paris green on the fruit nearest the highway in order that the public, seeing it, would assume that the entire vineyard was thus treated and not molest the fruit.

There came a time when disease attacked and practically destroyed an entire season's product. It was noticed, however, that the plants near the public road which had been sprinkled with paris green were not attacked by the disease.

Investigation proved that the paris green protected these plants from the epidemic. Further experiments gave evidence that the virtue of the paris green was due to the copper (paris green is a salt of copper), and the chemists of France took the matter in hand to discover what form of copper would be best as well as cheap.

This led to the preparation of a mixture of lime and copper which we know to-day as Bordeaux mixture. In fact, Bordeaux mixture is unquestionably far better known to-day than the Bordeaux wines, which it owes entirely to its virtue.

In making Bordeaux mixture the ingredients are copper sulphate (blue vitriol), 6 pounds; unslacked lime, 4 pounds; water, 50 gallons.

In the first place it is necessary to have a good quality of lime. It will pay to buy a good quality of rock or shell lime rather than risk a poor product by using a cheap grade that has possibly been exposed to the weather or contains a large percentage of sand, clay, &c.

Dissolve the copper in about twenty gallons of water, using a small quantity of hot water first, and then adding enough water to make the twenty gallons. But it must be cold when the lime is added. Then slack the lime by adding it to water, and when cool enough add water to make the twenty gallons, and mix thoroughly. The copper solution will be perfectly clear, but the lime solution will have a sediment.

Carefully pour off the clear lime solution, leaving the sediment behind, which can be thrown away. Now add the lime solution to the copper, stirring continually, which will precipitate the copper as a whitish cloud. After mixing them together, allow it to stand until the precipitate settles, and examine the clear liquid by taking a glassful and holding it up to light. This should be colorless. If it is blue it shows that the copper is not all thrown down and the lime is weak; more lime must be mixed as before and added until the clear solution is colorless. The reason for this is that the blue color shows the presence of undecomposed copper sulphate, which is likely to burn the foliage.

The object of diluting before mixing is to have the precipitated copper as fine as possible. The weaker the solution the finer the precipitate. Enough water is now added to make fifty gallons. Iron must not come in contact with this solution; use a barrel and wooden stick for mixing. This is a good general fungicide and particularly for grapevines, codling moth and San Jose scale, and if made in this manner will not need any addition, such as molasses, to make it stick.

Lime-Sulphur Wash.

This is another well known and important spray, sometimes called the California wash. It was originally used, in slightly different form, as a sheep dip, and its main use is for San Jose scale and the codling moth, peach worm, &c. The main ingredient is sulphur. Unslacked lime, 20 pounds; sulphur (flowers), 15 pounds; water, 50 gallons. The same precaution in regard to the quality of lime applies to this as well as to the Bordeaux mixture

Add the lime to about fifteen gallons of water in an iron tank. It is better to heat the water, and as soon as the lime has been added the sulphur should be put in. This should be then heated to boiling and water added gradually so as not to lower the temperature until the mixture is about thirty-five or forty gallons. This should be boiled for one hour, when the balance of the water is added to make the fifty gallons. During the cooking the mixture should be stirred very frequently, and when cooled it should be strained, as the sediment is to be thrown away, and the deep orange colored liquor is ready for use.

Lead Arsenate.

One of the more recent sprays for the orchard is lead arsenate, and this is unquestionably one of the best that has been produced. Its particular virtue lies in its application to the codling moth, which, it is estimated, is responsible for about 20 per cent. of the fruit destroyed annually by insects.

It might not be out of place right here to offer the suggestion that it is of the utmost importance to know that the ingredients are of good quality in making sprays. Why go to the trouble and expense of spraying if the quality of the ingredients is so poor that the spray will be worthless? You not only lose time, money and fruit, but too frequently a good spray is given a bad name because it does not produce results when in reality the true cause is poor material.

This is one advantage of making sprays at home. But when you have a heart to heart talk with the local druggist, explain the situation and have him test the quality of everything used.

Lead arsenate, soda arsenate, 8 ounces; lead acetate, 22 ounces; water.

Dissolve each in about two gallons of hot water, using a wooden or an enamel vessel. When dissolved mix by pouring one into the other, stirring constantly. Allow the precipitate to settle and then test the clear liquid by adding a few drops of a 3 per cent. solution of iodide of potash, which can be obtained from a druggist. If the addition of the iodide solution has no effect on it more lead must be dissolved and added. When enough lead has been added the iodide will produce a yellow sediment when added to the clear liquor. The reason for this is that the lead must be in excess in order to combine with all the arsenic. If there is any arsenic present in a soluble form it is liable to do more harm than good. When the test shows lead in the clear liquid it is proof that all the arsenic has been combined.

Allow the liquid to stand until all the sediment has settled, when the clear solution can be poured off easily. This is of no value and can be thrown away.

When wanted for use the lead arsenate is mixed with water in the proportion of one in twenty, and must be kept agitated when used.

The above makes one pound and is equal to from one to one and a half pounds of the kind generally sold.

Other Sprays.

Resin Soap—Resin, 12 pounds; caustic soda, 3 pounds; fish oil, 1½ pounds.

Dissolve the caustic in 5 gallons of water and add the resin, and heat until the mixture is uniform. Add the fish oil while still hot, bring to a boil and add water to make 40 gallons.

This is used for winter spraying. When wanted for ordinary use dilute with equal parts of water.

Kerosene Emulsion — Whale oil soap, 6 pounds; kerosene, 3 gallons; water to make 40 gallons.

Dissolve the soap in 6 or 8 gallons of hot water, add the kerosene and shake thoroughly for 5 or 10 minutes and add the balance of water.

Tobacco Spray—While we are busy with the orchard our better halves generally find time and pleasure in cultivating some ornamental plants. This spray is intended for their benefit. It is unquestionably the best general protection against insects that has been devised.

Tobacco scraps, 1 pound; sal soda, 1 tablespoonful; boiling water, 4 gallons.

Allow this to steep for a day and then add one bar of yellow soap that has been dissolved in one gallon of water. Strain for use.

Sow grass seed on patchy lawns if this spring work has not been attended to.

Mignonette, Shirley poppies, sweet alyssum and godetia may still be sown where the plants are to flower.

Sow seeds of single dahlias at once in the house, setting out the plants when large enough.

Cut out the dead wood from climbers and see that the live wood is properly fastened up.

ROOM IN UNITED STATES FOR MANY FARMS TO BE DEVELOPED.

The United States has approximately 850,000,000 acres of land—45 per cent of the country's land area—in crops or available for crop production, according to recent estimates of United States Department of Agriculture.

Of this amount approximately 480,000,000 acres were improved land in 1910; the remainder consisting of 200,000,000 acres of potentially arable forest and cut-over land, 60,000,000 acres of swamps and other wet lands needing drainage, 30,000,000 acres of potentially irrigable land, and about 80,000,000 acres of unimproved land other than woodland.

Over 1,000,000,000 acres of land in the United States are not adapted to cultivation, of which at least 360,000,000 acres may be used for forests and about 600,000,000 acres for grazing. Most of the grazing land is located in the Western States. In addition there are about 40,000,000 acres of desert land, and 40,000,000 acres of land in cities, rural highways, and railroad rights of way, an amount which will gradually increase with increasing population.

Why Land Lies Idle.

Much of the nonarable land within the domain of Uncle Sam consists of land once farmed and now abandoned, as well as areas which no one has thought it worth while trying to make into farms. Topographic and climatic conditions are of primary importance in explaining why so large an area remains unimproved. Nearly one-fifth of the United States is too hilly or rough for the successful production of crops. This mountainous or stony land, where rainfall is sufficient, is adapted to forests, and where the rainfall is light, is grazed by roving flocks of sheep or by cattle. Lack of sufficient rainfall is responsible for the absence of crops in nearly one-third of the United States. During occasional years of heavier rainfall large profits may be made growing crops in these semi-arid regions, but in the long run it pays better in most localities to use such land for grazing and grow in swales and seepage basins only a few acres of crops for supplementary feed.

Another factor restricting the cultivated area is the length of the growing season. Over a large extent of elevated land in the West, and also in the Adirondacks and a part of northern Maine, the average growing season is less than ninety days, while frosts may occur during the summer. There is also much land where the soil is too sandy or infertile for the profitable production of crops. Such soils are better adapted to forests, and when cleared for agricultural use are generally soon allowed to grow up again in brush and trees.

May Clear Forest Land.

About one-fifth of a billion acres of the cut-over land and woodland in the United States might be cleared up and the stumps removed so that the land would be available for productive farming. However, this work would involve heavy expenditures, and on this account clearing is slow, as farmers usually prefer to locate on land which does not involve so much pioneering. If all this agriculturally suitable forest and cut-over land could be made into farms averaging 160 acres, it would provide 1,250,000 farms, an increase of about 20 per cent. over the present number. It is believed unlikely that more than 50,000,000 acres, or enough for perhaps 300,000 farms, will be cleared by the present generation unless the Government assumes responsibility.

Another undeveloped agricultural resource consists of swampe and overflow lands that may be drained. It is estimated that there are some 60,000,000 acres of such land suitable for the production of crops after reclamation, or enough to make 1,000,000 farms of sixty acres. Most of this land located largely in the Mississippi River bottoms and other river bottoms of the Southern coastal plain and in the peat bogs and muck lands of the lake States and Northeastern States, is potentially fertile, but as drainage is expensive it will probably be at least another half century before all or even much of this area is reclaimed.

Opportunity in Irrigation.

The irrigated sections of the Western States have approximately 30,000,000 acres of land still available for farming purposes if complete utilization is made of the potential water supply. This is double the present area of the irrigated land and would provide 340,000 farms averaging eighty-seven acres, which is the average farm acreage of irrigated land shown by the 1910 census. However, construction of irrigation dams and canals is so expensive that it will be many years before much of this land is put to crops.

In the Eastern States and in the Great Plains region much waste land is classified in the census reports as "unimproved land other than woodland." It consists of stony upland pastures in hilly regions and other parcels of waste land in Eastern farms and of grazing land in Western ranches, aggregating in all about 50,000,000 acres. Some of this land in the East at one time was cropped and now constitutes in part the so-called abandoned farms. If prices of farm products continue high and farm labor again becomes comparatively cheap, a portion of this land will undoubtedly be reclaimed for crop production. The further development of dry farming may also make room for a few more farmers in the West. Under the 640 acre grazing homestead act passed in 1916 more than 45,000 applications had been made and approved by October 1, 1916. In the opinion of department specialists, however, most of the grazing homesteads offering promise of supporting a family have been applied for.

NATIONAL MILK SHOW.

Last night saw the close of the most successful National Milk and Dairy Farm Exposition at the Seventy-first Regiment Armory. It was a huge success from every viewpoint and particularly in point of attendance. The big building was crowded daily since the opening last Monday, and the story of milk, its production, distribution and consumption was well told. Thousands of men and women interested in the dairy industry visited the exposition. Mothers and fathers were keenly interested in the judging of prize babies and many were instructed in new ways of using milk. Generally speaking the various exhibits held the attention of visitors in a striking manner.

It was a most complete exhibit. It was a demonstration of the dairy industry in its various branches and was produced on a large scale—model dairy farms, cows milked by electricity, famous cows and bulls, milk drinks, powders, &c.

One of the features of the show was Financial Sensation, $60,000 Jersey bull. This wonderful bull was bred by Prof. Hugh G. Van Pelt, one of the leading dairy experts in the country, who recently sold one-half interest in the animal for $30,000 to E. M. Sharples. Financial Sensation has some of the most famous ancestors in the bovine world, including such famous animals as Interest, Finance, Financial King, Financial Countess, Fabulous Interests, Compound Interest and Financial Beauty. His pedigree reads like a paragraph about Wall Street. For example, Financial Beauty, as a two-year-old, yielded in one year 9,853 pounds of milk containing 476 pounds of butter fat, while Financial Countess, who was the world's champion Jersey cow in her day, yielded 13,248 pounds of milk and 795 pounds of fat. During that year an actual churn test was made, which showed a production of 944 pounds of butter, from which it will be seen that the value of Financial Sensation as a breeding proposition is not at all a fictitious value. In fact, he is considered so valuable that Prof. Van Pelt refused flatly to sell the bull outright.

There were numerous other bovine attractions at the exposition, including the famous "Butter Ball Sextette," owned by S. M. Kaplan of Yantic, Conn. This sextette comprises six of the most beautiful cows ever bred, and their specialty is supplying butter for the leading New York hotels. The exhibit of Holsteins was always surrounded by an interested group of spectators. One of the exposition features was the luncheon given in honor of Fanancial Sensation, the $60,000 bull, at the Waldorf-Astoria, the famous bull being present. Apparently he enjoyed the luncheon as much as the 200 other guests present, and even had a special menu served consisting of a hay salad and a dessert of bran meal pudding. His oatmeal water cocktail filled a five gallon pail. All of these delicacies were the concoctions of Oscar, the famous chef, who personally prepared the menu. The luncheon was tendered by John Andrews, president of "Kimball's Dairy Farmer," and his assistants, who are the owners of Financial Sensation; Hugh Van Pelt of Waterloo Jersey Farms, who bred the famous bull; S. M. Sharples and Dale Andrews of Greystone Farms. The guests were editors of dairy and farm papers and newspapers. All agreed that the luncheon was "simply bully." The speakers included Messrs. Andrews and Van Pelt, M. D. Munn and H. H. Charles. Among the guests were Dr. Copeland and Dr. S. Josephine Baker of the Health Department, the only woman guest of honor.

PEARL GUINEA FOWLS ·+· MALE and FEMALE

ERADICATING CANADA THISTLE

Complete eradication is necessary to rid a farm or garden of Canadian thistle. If only a few plants survive they will usually cause reinfestation in a short time. To secure thorough eradication the underground parts must be completely killed, since it is principally by these that the pest lives over from year to year. The most practical method of exterminating the underground parts is to starve them out by frequently destroying all the top growth of the plants. Since plants can assimilate food only by the aid of the green leaves the frequent cutting of the tops uses up food stored in the fleshy roots. The weed is much easier to eradicate during droughts than during wet weather, and operations of hoeing, plowing, harrowing, and cultivating directed against the thistle should never be undertaken when the land is wet.

Eradication on Small Areas.

The importance of eradicating the Canada thistle on small areas can hardly be overestimated, says the bulletin, since the pest spreads rapidly and a small patch may be the direct cause of infesting an entire farm almost before the farmer is aware of the presence of the weed. The most common and practical method on small areas is the frequent cutting of the green growth preferably below the surface of the soil. Perseverance is needed to assure success.

Eradication on Large Areas.

Two principal plans of eradication are applicable on large scales—clean cultivation with a crop and summer fallowing followed by a cultivated crop. The first method has the advantage of killing the weeds without losing the use of the land while so doing. Summer fallowing followed by a cultivated crop keeps in check the top growth and starves the root system, thereby eradicating the weed.

When a cat forms the habit of catching little chickens usually the only way to stop further loss is to kill the cat. This may cause complications when the animal is a pet or a neighbor's property, but it is the best remedy.

Owls often kill many chickens that roost in trees or exposed places. They even enter the open windows of brooder houses and attack the chickens. To avoid this danger it is best for the farmers to keep all the chickens indoors at night and to screen the windows.

The floors of portable colony houses should be at least one foot from the ground and the space underneath should be open and free. Permanent brooder houses should have cement floors and the doors and windows should be screened with one inch mesh wire fencing. If such precautions are taken rats and weasels usually do little damage.

GUINEA FOWLS.

By SARAH A. LITTLE.

Those who have any acquaintance with guinea fowls know that there are three varieties. The pearl guinea is best known, as it is the hardiest, requires the least care and is the best all around bird of the species. It breeds true to color, a bluish gray with white "polka dots" on the body, elongated white spots on the wings and a purplish sheen on the upper part of the breast extending to the head. There is red, white and blue in the head coloring, but the blue is not of a tint to make the bird a reminder of the national colors.

The white African guinea is also a bird of pure breeding and reproducing its pure white plumage and fine head appendages with certainty. They are similar to the pearl in shape and all other characteristics except color. The skin is yellow and the dressed carcass is more attractive than that of the pearl. The lavender variety looks like a faded pearl. The white spots appear on a pale gray background. They are the result of a cross of white with pearl guineas, the resulting females being bred back to a pearl male. Other spots are made and some curious markings are produced by this sort of cross breeding.

Guineas are an amusing fowl, not destructive to vegetation, do not scratch badly in the earth, but they do love strawberries and tomatoes and all red fruit. They are valuable, aside from their efficiency in the subjugation of insects, as producers of food. Dressed for the table as broilers, roasters or in stews, they are most delicious. It is said that they are often served as game birds, but this seems most unnecessary, as they need no other than their own name to make them popular. Guinea eggs are also fine food and their keeping qualities are much superior to those of hens' eggs. They are small, but of high food value.

Distinguishing Sex in Guinea Fowl

Many have trouble in selecting guineas with respect to sex, but by listening to their calls there need be no uncertainty. Either sex when frightened gives the same shrill, ear splitting shriek and chatter, but the male in common conversation with the flock uses a soft, complaining sort of call which the female never imitates. This sound, while not musical, is not annoying. The female, on the other hand, fairly screams her slogan, Buckwheat! Buckwheat! Buckwheat! The male has no cry which is in the least like it. The head of the guinea hen is smaller and its appendages are more delicate than those of the male.

Rearing Young Guineas.

A practice with which I have been successful in rearing young guinea fowl involves the use of common hens as incubators and brooders. The hens employed should be tame and accustomed to their caretaker's presence, but with action enough to take the little birds off for long "hikes" in search of insects. An old tame Leghorn does nicely, though Rhode Island Reds leave little to desire.

A large hen will cover from fifteen to seventeen eggs safely. The time of incubation is twenty-eight days, but it is wise to watch for precocious youngsters who may fall out of the nest and work destruction for themselves or their nestmates. The cries of the young might cause the hen to leave the unfledged nestlings to suffer or the straggler might get chilled and die. It is better to have the nest so guarded that the chicks cannot escape until liberated.

A large rainproof coop should be in readiness at some distance from other poultry and in the shade of a tree if possible. A detaining pen, made easily by removing all boards from a long packing case, except the sides and one end, and hooking the free ends, one to each side of the coop, makes a suitable home for the hen and brood. Care must be taken that there be no hole or crack through which the young can escape, as they must be closely confined for a few days to learn the hen's language; and they are so small they can get out where water would run. In a week if the weather is fair hen and brood may have liberty for a short time and the hen must be taught to return to the coop for food and water and a sheltering place at night or during storms.

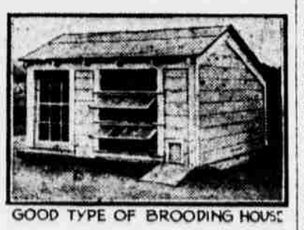
The first feed is stale bread crumbled, little chick grit and a shallow dish of water with wheat or cracked corn for the hen. In a week or two the little fellows will eat the hard grain with their mother and if the hen is a good forager they will grow and thrive. It is well to have a sitting of eggs for the guinea when she becomes broody, for she will rear a fair proportion of her hatch with little if any care.

REARING CHICKS.

By E. I. FARRINGTON.

Commercial poultrymen have been amazed at the suddenly increased interest manifested this season by amateurs. In some towns it seems as though a poultry house was going up in almost every backyard. Certain it is that the number of small flocks is going to be very much larger the coming season than ever before. Hatching establishments report a tremendous demand for day old chicks, even though the price is higher than in the past. Poultrymen who have eggs to be incubated in custom hatcheries are finding it difficult to get accommodations. There can be no question about the fact that the poultry business is coming back fast.

It is unfortunate that the losses



GOOD TYPE OF BROODING HOUSE

among amateurs are usually much greater than those among more expert poultrymen. Yet these losses may be avoided to a large extent by observing a few simple rules. If the chicks are raised in brooders it is of the utmost importance that overcrowding be avoided. Probably that accounts for more losses than any other mistake. The ordinary lamp heated brooder will not accommodate more than fifty chicks safely. The larger stove heated brooders are often rated by the manufacturers as having a capacity of 500 or 600 chickens. This number is altogether too large, however, except late in the season when the weather gets warm. As a rule 300 chickens are enough to keep under one cover when the weather is cool.

Brooder operators are sometimes troubled by having the chicks crowd to one side at night. They may not understand that the chicks always have a tendency to seek the side of the house from which the light comes. If a window can be set into the rear wall so that the light will enter from two sides there will be much less crowding at night and the chicks will form a circle around the hover, which is the proper way.

Whatever kind of brooder house is being used, it is always a good plan to have strips of chicken wire set into the corner so that the chicks will not lose themselves there.

When the chicks are being raised with a hen there is likely to be considerable loss from vermin unless the coop is kept clean and the hen properly cared for. The best way to keep a coop or a henhouse free from red mites is to use carbola, or some other preparation which can be easily applied and which is death to lice. Dusting the hens with lice powder at intervals will free them from body lice and a very little grease applied to the heads of the chicks will drive away the dangerous head louse. When a hen is to be set it is always a good plan to rub blue ointment into the skin just around the vent. A piece as big as a pea is large enough. This is one of the most effective ways of keeping lice away while the hen is on the nest. It is a sad fact that a great many broody hens succumb to the plague of lice.

It is always advisable to keep the hen confined and to let the chicks run. If the hen is allowed her liberty she will almost invariably lead her brood through the tall, wet grass and often come home with only half of them. When the hen is confined the chicks roam only a short distance away and are called into the coop when rain

SHIPPING BOX FOR DAY OLD CHICKS

begins to fall or danger from hawks threatens.

Overfeeding is responsible for many chicken losses. It is difficult for the beginner to refrain from feeding the chicks as soon as they will eat, but this is bad practice. It is much better to let them fast for thirty-six or forty-eight hours. They really have plenty of sustenance in the yolks of the eggs which were absorbed just before they were hatched. Traces of yolk have been found at the end of a week. Too early feeding is likely to induce bowel trouble. It is much better to feed a little at a time and to feed often than to give the chicks all they will eat. Professional chicken raisers like to keep their chicks a little on the hungry side all the time.

There is no better first feed than stale breadcrumbs soaked in milk and squeezed dry. If it is whole wheat bread, so much the better. After the first day a gradual shift may be made to a commercial chick feed. There are many good feeds of this kind on the market, but those which contain skimmed milk seem to give particularly good results in the hands of amateurs. Gradually the feeding of small grains may be commenced, and then the mash, always used dry, may be kept before the chickens all the time. It may not be a practical thing to do as a rule, but one poultryman of the writer's acquaintance finds that his chicks make unusually rapid growth if he feeds them an extra meal at night. This is made possible by having an electric light in the brooder house which is kept burning until 9 o'clock. His chickens get one more meal a day than those of his neighbors and his results seem to warrant the extra time and labor required.

It is an axiom among commercial poultry keepers that chickens should be got onto the ground as quickly as possible. Sometimes they shovel away the snow outside the brooder house so that early hatched chicks can get outside for a few hours each day even though the temperature may be low. This is a valuable hint for the amateur who is using a brooder. It is a great mistake to keep the chicks confined to the house after they are a week old. It is usually important, though, to have a yard with a stout wire fence in suburban sections, because otherwise the neighbors' cats are likely to rapidly deplete the flock. It is an unfortunate fact that the losses from the depredations of cats are very heavy each year, and they are hard to prevent except by keeping the chicks fenced in.

One other source of loss is rats. The number of chickens which they destroy and carry away runs into the hundreds of thousands every season. They are likely to frequent the brooder house unless it has a cement floor or cement foundation, and in that event it is exceedingly important to have some sort of wire fence around the brooder which will keep them out, this barrier being set in place every night.

MASH MIXTURE MAKES GOOD CHICK RATION.

A satisfactory ration for feeding young chicks as tried out by the Ohio Experiment Station during the last few weeks is a mash composed of two parts by weight of ground corn, three parts bran and one part fine meat scrap. Cracked corn is also used as a grain ration. The mash mixture is fed from a self-feeder after the chicks are four weeks old; before this time it is given at three regular intervals daily.

For feeding chicks that come directly from the incubator equal parts by weight of the mash and boiled eggs has been found satisfactory. The eggs used are those tested out of the incubator after seven days incubation.

Boys and girls should be encouraged to start in the poultry business. It requires little money to invest, and the current expenditure may be reduced in part by utilizing farm and home wastes. If the project begins with a laying flock the return begins early, especially by supplementing the food supply of the home.